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10CV/CT42

**Fourth Semester B.E. Degree Examination, Dec.2015/Jan.2016**  
**Concrete Technology**

Time: 3 hrs.

Max. Marks: 100

**Note: 1. Answer FIVE full questions, selecting at least TWO questions from each part.**  
**2. Use of IS 10262-2009 is permitted.**

**PART - A**

- 1 a. Explain with flow chart, the cement manufactured by wet process. (10 Marks)
- b. List the different laboratory tests conducted on cement. Explain any one of them in detail. (10 Marks)
- 2 a. Explain the role/effect of fine and coarse aggregates in concrete. (10 Marks)
- b. Write a note on "mechanical properties" of coarse aggregates. Explain the test for determination of aggregate impact value as per IS2386 part IV - 1903. (10 Marks)
- 3 a. Define the term "Workability." List the factors affecting workability of concrete and methods of measurement of workability. (10 Marks)
- b. List the various stages/process of production of quality concrete. Explain in brief. (10 Marks)
- 4 a. Discuss the role of chemical admixtures and mineral admixtures in cement concrete. (10 Marks)
- b. Write short notes on: (i) Rice husk ash, (ii) Air entering agents (10 Marks)

**PART - B**

- 5 a. List the factors influencing strength of concrete. (06 Marks)
- b. What is the relation between:
  - i) Compressive strength and tensile strength of concrete as per IS456-2000
  - ii) Cube strength and cylindrical strength of concrete. (04 Marks)
- c. Explain in brief the principles of flexural/modulus of rupture testing of concrete under third-point loading method. (10 Marks)
- 6 a. Mention the different moduli of elasticity of concrete. (04 Marks)
- b. What are the factors affecting shrinkage and creep of concrete? (06 Marks)
- c. Write short notes on:
  - i) plastic shrinkage
  - ii) drying shrinkage (10 Marks)
- 7 a. Define the term durability. What is its significance and its impact on W/C ratio? (10 Marks)
- b. Write short notes on:
  - i) Sulphate attack and its control
  - ii) Freezing and thawing and its remedial measures (10 Marks)
- 8 a. Discuss the steps involved in Indian standard method of concrete mix design (IS 10262-1982). (12 Marks)
- b. List out the variables in proportioning of concrete mix design. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank space.  
 2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.